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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,392	02/22/2007	Alwyn John Seeds	ZIN-002	9031

51414 7590 02/13/2008  
GOODWIN PROCTER LLP  
PATENT ADMINISTRATOR  
EXCHANGE PLACE  
BOSTON, MA 02109-2881

EXAMINER
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PEACE, RHONDA S

ART UNIT	PAPER NUMBER
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2874

MAIL DATE	DELIVERY MODE
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02/13/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,392	<b>Applicant(s)</b> SEEDS ET AL.	
	<b>Examiner</b> Rhonda S. Peace	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 15-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 15-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/23/06, 3/22/07, 6/7/2007</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statements (IDS) submitted on 6/23/2006, 3/22/2007, and 6/7/2007 were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

### ***Drawings***

The drawings are objected to because Figures 1, 4a, 4b, 5b, and 8 contain excessive shading, making said Figures unsuitable for publication. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Cunningham et al (US 6064786).

Pertaining to claims 1-7 and 17-21, Cunningham et al discloses a method of optical communication and a device thereof comprising using a single-mode optical transmitter **1** to couple radiation into a multimode fiber **6** such that the number of modes excited in the fiber **6** is restricted, thereby suppressing background noise in the demodulated signals. The transmitter **1** is driven by a combination of electrically-modulated radio frequency signals and baseline signals. The coupling is preformed such that the transmitter's signal is launched into said multimode fiber **6** in a co-linear manner, but off-set from the fiber axis (see Fig 1). Moreover, said transmitter 1 has a linear response that is responsive to both baseband and radio frequency inputs. Moreover, a photodetector is included. Said fiber 6 has a core diameter of 62.5 microns, and said off-set is approximately 15.5 microns (measured with respect to the center of the multimode fiber to the center of the optical radiation emitted from said

transmitter). Said transmitter **1** includes drive circuitry **3** and **4** to drive said transmitter, and at least two inputs (one each of the electrically-modulated radio frequency signals and one for the baseband signals), such that the transmitter **1** receives said electrically-modulated radio frequency signals and baseband signals to drive said transmitter **1**.

This method and device of Cunningham et al ensures high quality transmission of both electrically-modulated radio frequency and baseband signals. See Figures 1 and 9, col. 5 lines 18-43, col. 6 lines 41-42, col. 7 lines 6-39, col. 8 lines 53-67, and col. 9 lines 1-15.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15, 16, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al (US 6064786), in further view of Stuart (US 6525853).

Concerning claims 15, 16, 22 and 23, Cunningham et al discloses the method and device as disclosed above. However, Cunningham et al does not disclose multimode fiber combiners to combine the optical signal from multiple multimode fibers to a single multimode fiber for onward transmission, or multimode fiber splitters to split the optical signal on a single multimode fiber to multiple multimode fibers for onward transmission. Stuart discloses a laser communication system wherein a 1xN fiber splitter **20** combines signals from n lasers **18** onto multimode fiber **12**, and moreover 1xM fiber splitter **14** splits the signal traveling on multimode fiber **14** to a plurality of detectors **16**. See col. 3 lines 41-48, and Figure 2. It would have been obvious to combine the teachings of Stuart and Cunningham et al, as Stuart teaches the above described method and device serves to introduce signal diversity into a laser communications system, thereby increasing transmission bit rates and/or fiber length for a given bit rate. See Stuart, col. 3 lines 30-48, and Figure 2.

### ***Conclusion***

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Jenkins (US 7231114), Blauvelt et al (US 7228032), Cheng et al (US 6925099), Golowich et al (US 6501884), Giaretta et al (US 6510265), and Haas et al (US 5416862), Hallemeier et al (US 2005/0025416).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Rhonda S. Peace/  
Examiner  
Art Unit 2874

/Michelle R. Connelly-Cushwa/  
Primary Examiner, Art Unit 2874  
February 4, 2008